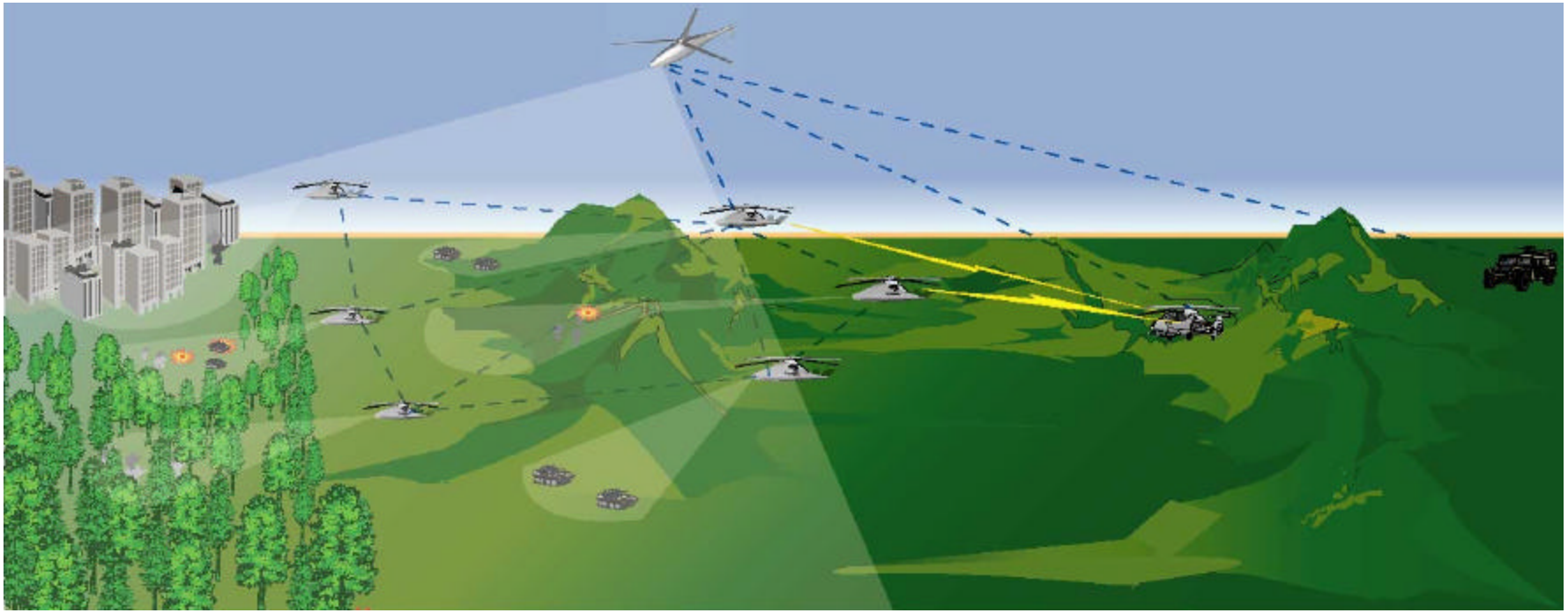
Unmanned Combat Armed Rotorcraft (UCAR)



Program Manager

Don Woodbury

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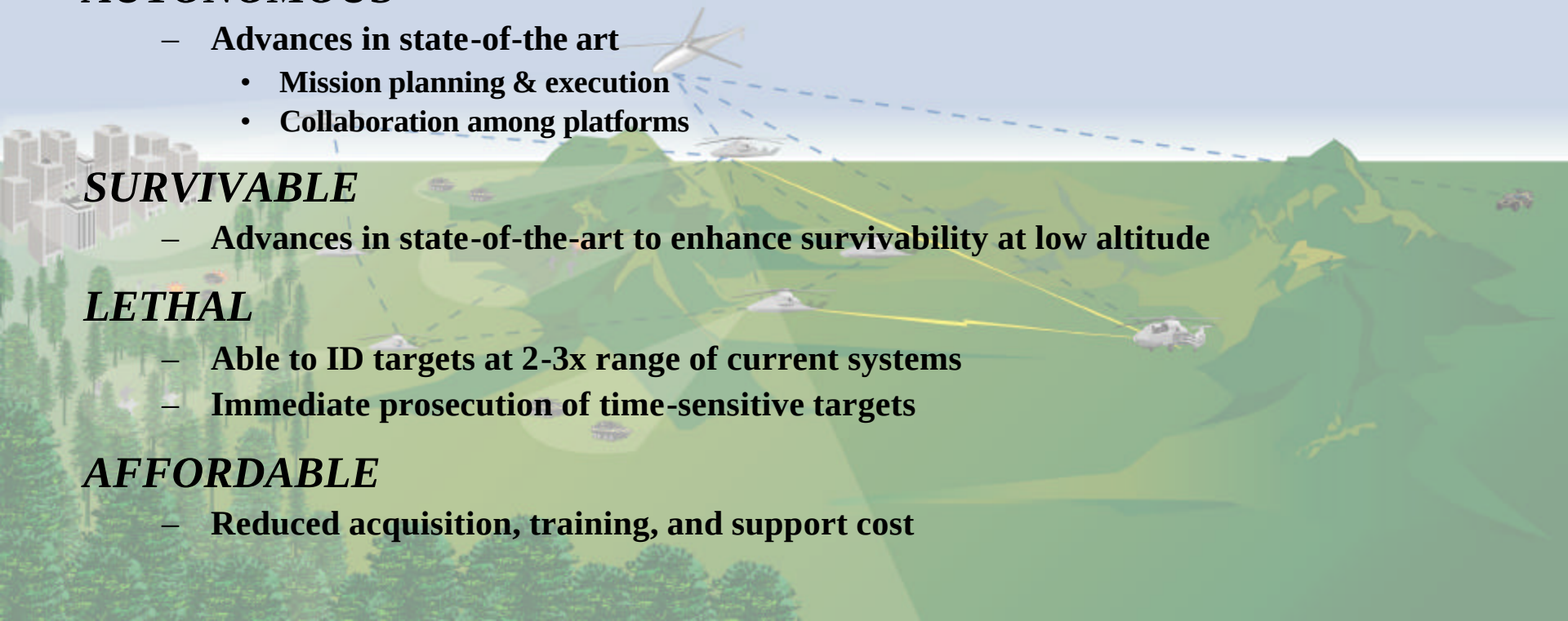
Program Contact Information

This briefing is being posted on the WWW to provide information about near term program plans and goals.

If you believe that you can contribute to the success of the UCAR program, you are encouraged to contact one of the potential prime contractors identified under the POC hyperlink on the UCAR main page. Only these potential prime contractors will be receiving the UCAR solicitation.

Unmanned Combat Armed Rotorcraft
- A Revolution in VTOL Systems -



UNMANNED / MANNED INTEGRATION

- **Cooperative mission execution to exploit the strengths of all systems**
- **Reduces risk to manned platforms**
- **Relieves manned platforms of the need to perform the dull, dirty, and dangerous missions**

AUTONOMOUS

- **Advances in state-of-the art**
  - **Mission planning & execution**
  - **Collaboration among platforms**

SURVIVABLE

- **Advances in state-of-the-art to enhance survivability at low altitude**

LETHAL

- **Able to ID targets at 2-3x range of current systems**
- **Immediate prosecution of time-sensitive targets**

AFFORDABLE

- **Reduced acquisition, training, and support cost**

Goals & Objectives

Demonstrate a system capability to affordably and effectively identify and prosecute masked ground targets at ranges that limit threat capability to engage friendly forces

- Develop
  - A UCAR system architecture that can function effectively as an element of the Army's Objective Force system-of-systems architecture
  - The next generation of autonomous operations & command and control technologies
- Demonstrate
  - The capability to perform armed reconnaissance and attack missions in the Objective Force system-of-systems architecture
  - The capability to identify and prosecute targets employing camouflage, concealment, and deception (CC&D) in close terrain
  - An affordable UCAR system at a TRL sufficient for transition to the Army

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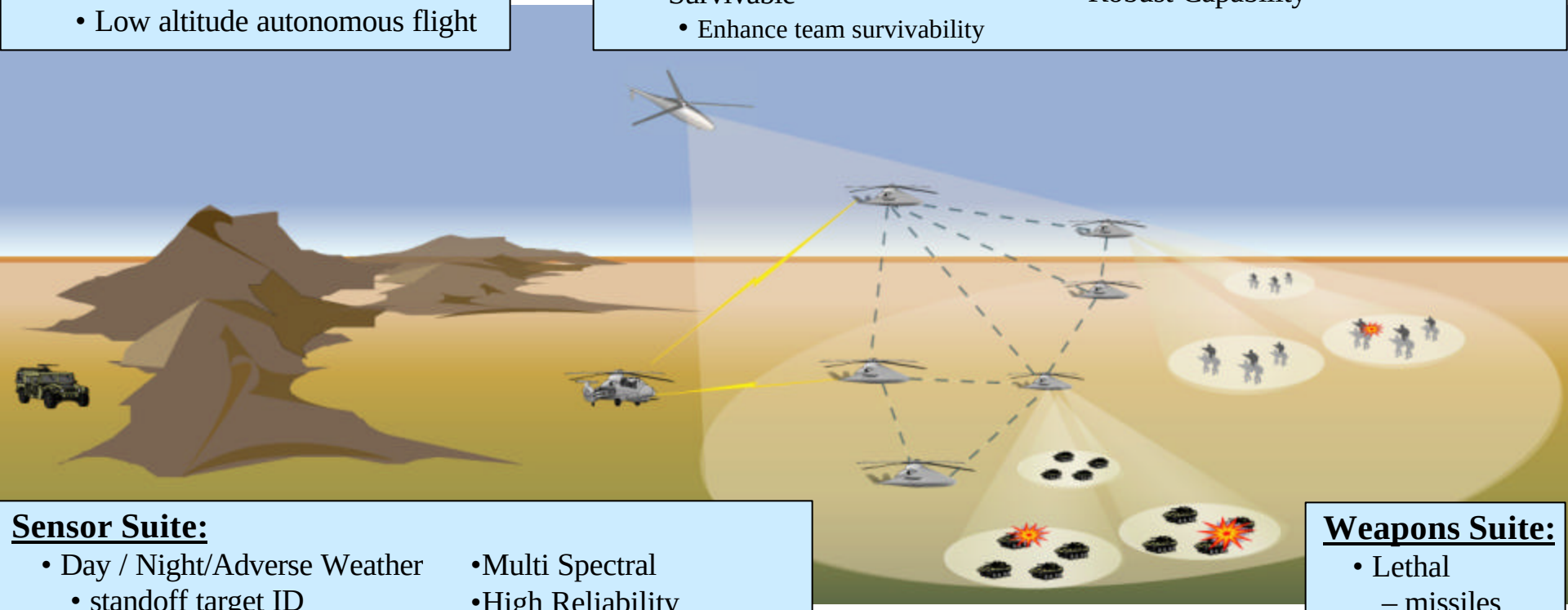
UCAR System Concept

Command & Control:

- Platform
  - Top-level mission planning
  - Dynamic retasking
  - Autonomous operation
  - Collaborative mission execution
  - Low altitude autonomous flight

Air Vehicle:

- Day / Night & Adverse Weather
  - Similar capability to manned system
- Modular Payload
- Survivable
  - Enhance team survivability
- Performance – range, speed, endurance
  - Compatible w/manned system
- Affordable
  - Flyaway cost
  - O&S cost
- Robust Capability



Sensor Suite:

- Day / Night/Adverse Weather
  - standoff target ID
  - BDA, IFF
  - Distributed / cooperative
- Multi Spectral
- High Reliability

Weapons Suite:

- Lethal
  - missiles
  - rockets/gun
- Non-Lethal

UCAR System of Systems Environment

- Integral to Army Objective Force O/O concept:
  - Future Combat System Mission Need Statement
  - Objective Force concept of operations
  - Command, Control, Communication and Computer (C^4) systems architecture
  - Communication relay
  - Long range fires
  - Manned and unmanned teaming operations
  - Air traffic services
- Connect to Army and Joint ISR/RSTA systems architecture

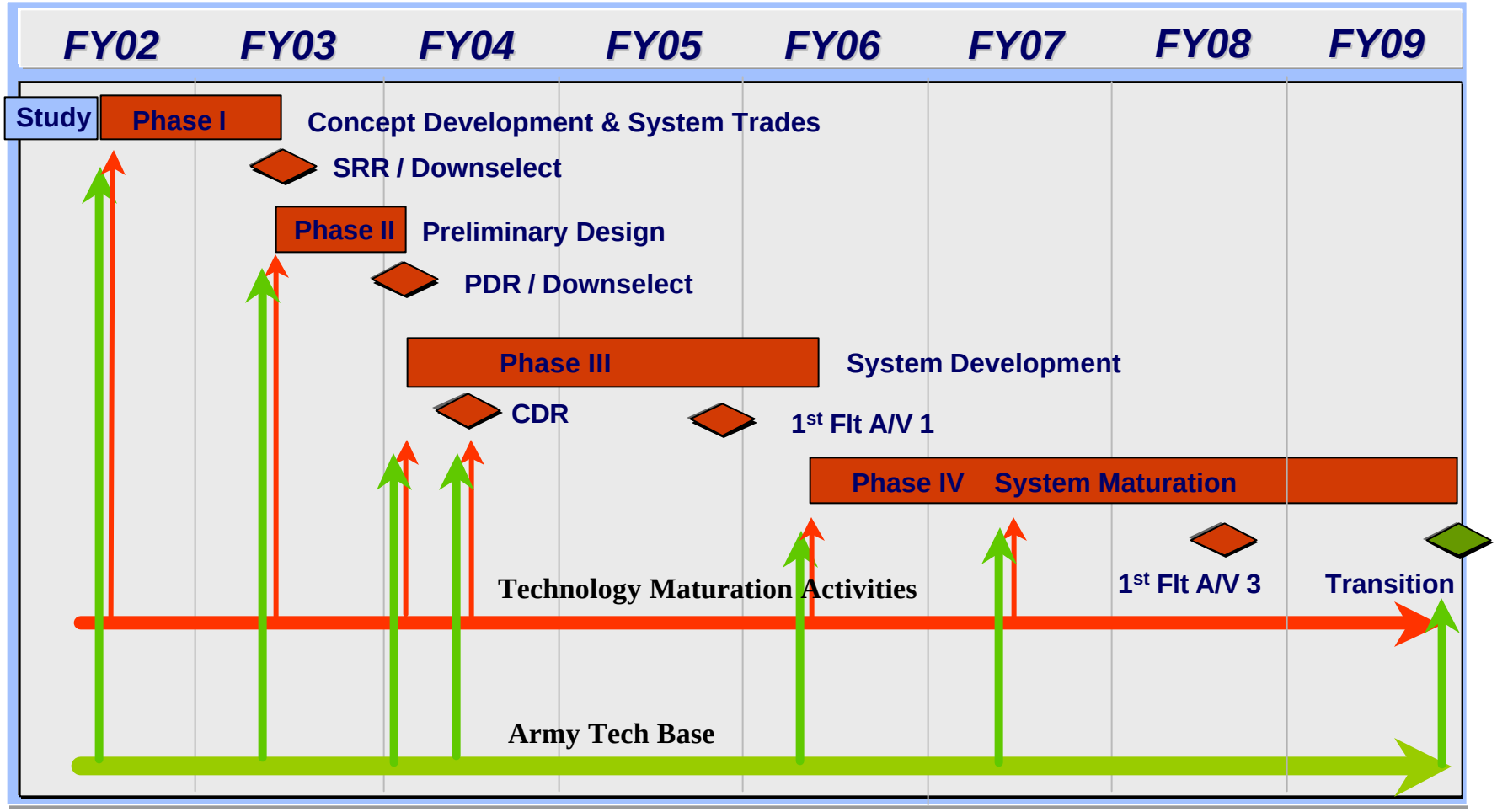
Challenges

- Technology Challenges
  - Affordable and robust solutions
  - Low altitude autonomous flight
  - Evolution of mission planning & execution to high level tasking / autonomous & collaborative execution
  - Substantial improvement in target ID & target recognition ranges
- Affordability Goal
  - 20% to 40% of Comanche flyaway cost
  - 50% to 80 % reduction over Apache O&S cost

Program Plan

- Phase I – Concept Development and Systems Trades (12 months)
  - Architecture development, system trades, & technology risk reduction
  - Objective system conceptual design, demonstration system requirements
  - Up to 4 contractors
- Phase II – Preliminary Design (9 months)
  - Develop sufficient system concept fidelity to validate program goals and objectives
  - Preliminary Design Review of demonstration system
  - Up to 2 contractors
- Phase III – System Development and Testing (2 ½ years)
  - Develop and fabricate 2 demonstration systems (X-vehicles)
  - Test system and subsystem performance
- Phase IV – System Maturation and Demonstrations (3 ½ years)
  - Design, fabricate and test Air Vehicle #3 (B Model) based on lessons learned
  - Demonstrate key attributes of UCAR system in a system of systems environment; including Service and Joint exercises
  - Transition to Army

Program Schedule



Phase I Products

- Trade Studies & Analysis
  - System of systems
  - Air vehicle
  - Mission control
  - Supportability
- UCAR Objective System (UOS) Design
  - UOS Conceptual Design Review
  - Annotated “Day-in-the-Life” briefing
  - System Capability Document
- Total Ownership Cost Analysis
- Effectiveness Analysis
- UCAR Demonstration System (UDS) System Requirements Review (SRR)
- Initial Risk Management & Mitigation Plan
  - Critical Technologies, Processes and System Attributes
  - Demonstration building blocks & functions

Summary

- The UCAR program is seeking to develop and demonstrate a new and unique capability as an element of the Army's Objective Force
- This program has aggressive goals for system performance - innovative applications of technology will be required
- Companies interested in participating in this program should contact one of the potential prime contractors identified on the UCAR web page